PUBLIC HEALTH AND OUR ENVIRONMENT

Every human has a fundamental right to an environment of quality that permits a life of dignity and well being.
–U.N. Conference on the Human Environment, 1972

John Banks, Penobscot Nation

The health of New Englanders is directly linked to the condition of our environment. From the quality of our air and the water we drink, to water quality in our lakes and rivers, to the presence and cleanup of hazardous waste, our environment is a constant influence on our lives and physical well-being.

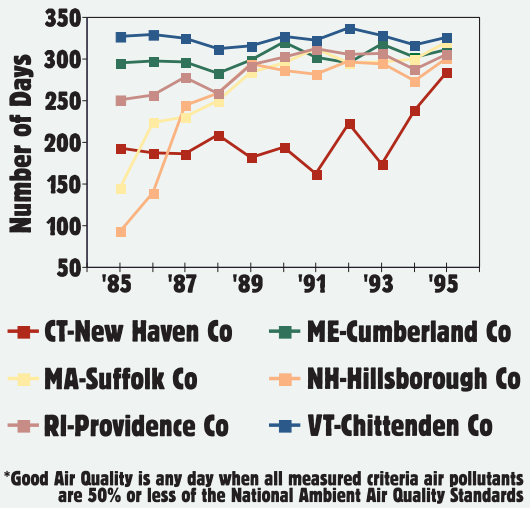
Many of the environmental indicators we present in this section show that significant progress is being made in lowering public health risks for the citizens of New England, but there is a long way to go before all environmental risk factors are brought under control. We must continue to address issues of air quality, water quality, and hazardous waste treatment if we are to leave a healthier New England environment for future generations.

GOOD NEWS ABOUT CLEAN AIR

The total number of healthy days each year – those days when all significant air pollutants are at or below 50% of the National Ambient Air Quality Standards – is an important air quality indicator. The news is very good. The number of healthy air quality days for the last ten years in six urban counties in New England shows improvements in air quality (Figure 1). If we compare today's situation to the past, we find that air quality varied greatly across the region twelve years ago – from more than 320 healthy days in Vermont to only 150 healthy days in New Haven, Connecticut. By 1995, however, there were nearly 300 healthy days in each of these urban areas.

Although we have made significant progress in our efforts to improve air quality, our work is not over; we still have days during the summer that exceed acceptable ground-level ozone standards. In addition, new research shows health effects associated with exposure to ozone and particulate matter at levels that are below current standards. These studies suggest that children playing outdoors and outdoor workers experience respiratory problems, such as asthma attacks and shortness of breath, when they are exposed to lower levels of ozone in summertime smog for six to eight hours. Studies also point to a connection between exposure to very fine particulate matter (less than 2.5 microns in diameter), aggravation of respiratory and heart disease, and premature deaths. EPA is evaluating this research and has proposed new National Ambient Air Quality Standards to address these issues.

Public Health Figure 1



*Good Air Quality is any day when all measured criteria air pollutants are 50% or less of the National Ambient Air Quality Standards

Source: EPA AIRS

Fletcher's Paint Site: Bad Dust

The Fletcher's Paint site, located in Milford, New Hampshire, manufactured paints and stains from 1948 until 1991, and was listed as a National Priority List (NPL) Superfund site in 1989. Earlier cleanup actions had included temporary gravel covers on contaminated soils, removal of almost 1,300 drums of waste, and demolition and disposal of a storage shed. Investigations undertaken between 1991 and 1994 showed PCBs as the greatest contaminant still of concern at the site. Dust samples from eight nearby homes showed that all eight were contaminated with low levels of PCBs. Working with the New Hampshire Department of Public Health Services, EPA determined that the contaminated soils presented a health risk to the residents. After several months of negotiation, EPA ordered the excavation of all PCB-contaminated soils containing more than one ppm (parts per million) PCB from the yards and driveways of these residences. The excavation took place in August 1995. Four families took part in a voluntary relocation program offered by EPA for the duration of the removal activity. A total of 780 tons of contaminated soils was removed from the properties, preventing wind-blown dust from spreading PCB contamination.

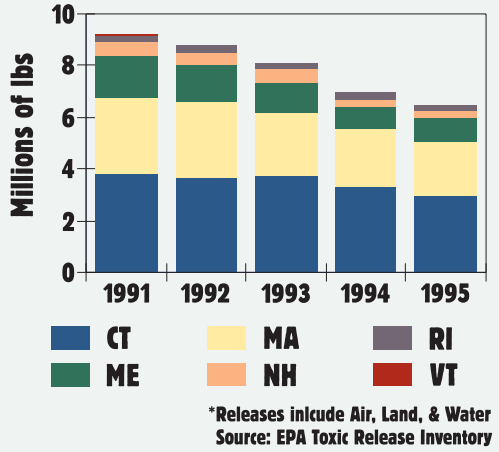
A SERIOUS CONCERN

Asthma has become a major public health problem – it is the leading cause of chronic illness in our children and is the leading cause of school absenteeism due to sickness. The number of Americans with asthma increased by 42% in the last decade and continues to rise, elevating asthma to the unfortunate status of "the environmental disease of the decade." Asthma is a disease characterized by inflammation of the airways that makes it hard to breathe. It is increasing both in prevalence and severity. The number of asthma deaths has increased by 58% in this decade. In New England, asthma is the cause in one out of every 100,000 deaths. Although this is low when compared to the rest of the nation, there is reason for concern. In Boston alone, it is estimated that more than 100,000 children are affected by asthma. One survey found an average of two asthmatic children per Boston classroom. The highest rate for asthma hospitalization is in the poorer neighborhoods of the inner city.

A host of air pollutants, such as particles, nitrogen oxides, tobacco smoke, ozone, allergens, and chemicals, aggravate asthma. Our environmental indicators show that we have reduced ambient air levels of many of these pollutants. Unfortunately, even brief or low-level exposure may be a problem, and children, minorities, and the urban population are at the greatest risk. Asthma prevention is an important element of EPA's commitment to public health and environmental justice.

Public Health Figure 2

Releases of Carcinogens* In New England 1991-1995



*Releases inlcude Air, Land, & Water
Source: EPA Toxic Release Inventory

Most New Englanders spend more than 90% of their time indoors. This means that indoor air pollutants, which can also aggravate asthma, are another concern. EPA has determined that poor indoor air quality is among the greatest health risks to the population. We are trying to help people identify and control indoor air problems. For example, exposure to secondhand tobacco smoke is an undisputed trigger for asthma in children. EPA is working with schools and community groups to distribute information about secondhand smoke and indoor air. The agency has developed a Tools for Schools Kit, which provides information about conducting home asthma evaluations and promotes a team approach to indoor air quality.

GETTING DANGEROUS CONTAMINANTS OUT OF THE ENVIRONMENT

Working in partnership with the New England states and private industry, EPA has achieved a significant reduction in the amount of cancer-causing substances (known as carcinogens) released into the air, land, and waters of New England. Taken from EPA's Toxic Release Inventory, these environmental indicators show a drop in the release of carcinogens from 9.5 tons per year in 1991 to just over 6 tons per year in 1995 (Figure 2). The New England Environmental Assistance Team, through their pollution prevention activities and outreach efforts, is focusing on four industrial sectors – printing, metal finishing, electronics, and municipalities – in our pursuit to reduce the use of toxic compounds.

CONTROL STRATEGIES FOR BENZENE: MORE GOOD NEWS

The gasoline we use in our cars is composed of a complex mixture of more than 100 organic compounds. Prior to the 1970s, gasoline contained small

Public Health Figure 3

New England Superfund Program

Total Wastes Treated Through 1996

Groundwater	6.5 billion gallons
Liquid Waste	1.2 million gallons
Surface Water	300 million gallons
Contaminated Soil & Other Solid Wastes	1 million cubic yards
Sediment	14,000 cubic yards

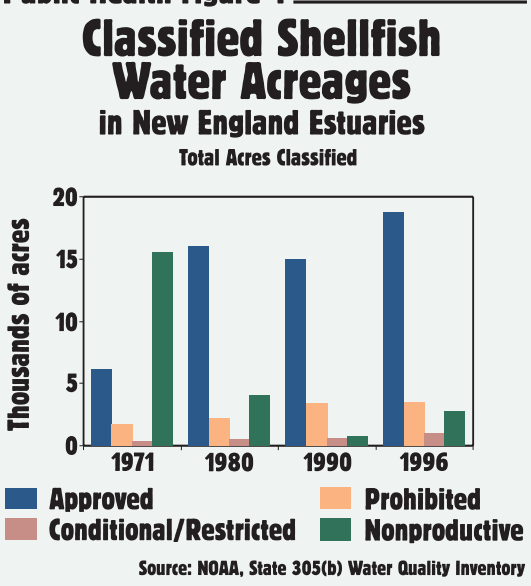
quantities of lead and other toxic compounds. Lead was removed from gasoline in the 1970s and no longer poses a public health threat. Many of the other toxic compounds, however, still remain. Benzene is among the most toxic of these. Research shows that people who are exposed to benzene can suffer immediate and long-term effects ranging from narcosis, nausea, and headaches, to severe blood disorders and leukemia.

The Clean Air Act Amendments passed by Congress in 1990 required gasoline refiners to produce reformulated gasoline (RFG) by January 1, 1995 that contained smaller amounts of toxic compounds such as benzene. The reformulated gas program has had a dramatic and positive effect on cleaning the air in New England. In 1995, summertime concentrations of benzene in RFG had decreased by 60% from levels only a year earlier. Additional reductions in the concentration of toxic compounds in gasoline are scheduled to take effect by 1999.

CLEANING UP THE MESS

Correcting the damage caused by decades of hazardous waste dumping is an immense task, but we have begun to make visible progress. Since 1980, EPA's New England Office has taken ninety-three immediate actions at National Priority List (NPL) Superfund sites and made 274 emergency responses at other hazardous waste sites and material spills to address imminent threats to public health. At the eighty-one Superfund sites under remediation, nineteen have met cleanup goals for land, surface, or ground water, fifteen sites have partial goals met, and forty-seven have ongoing cleanup activities.

Public Health Figure 4



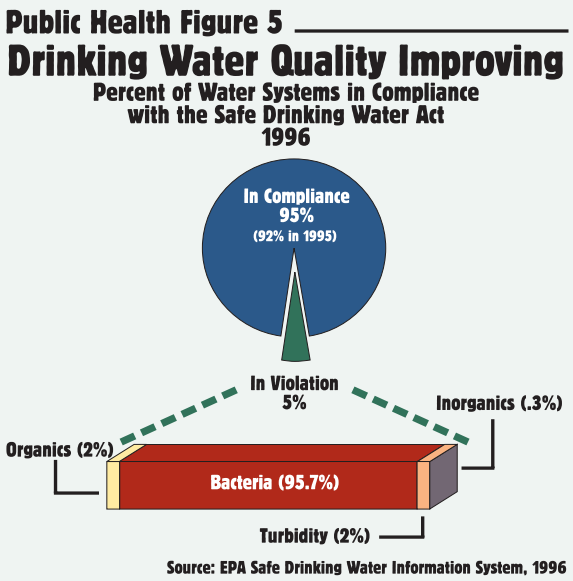
Johns Manville Removal Project

From 1900 to 1985, the Johns Manville Company operated an asbestos insulation manufacturing facility in one of the oldest neighborhoods of Nashua, New Hampshire. During its operation, manufacturing wastes containing asbestos, PCBs, and other hazardous materials were stored or buried throughout two site buildings and the surrounding property. Located within a one-mile radius of the site are 13 schools, a hospital, and 13 elderly and low-income housing developments. The site was condemned by the City of Nashua in October 1994, to avoid a potential public health hazard and to prevent trespassers from entering the buildings. In response to an emergency request by the state, EPA activities at the site began in the summer of 1995, when our staff conducted a removal of more than 370 tons of asbestos-containing materials, 630 gallons of PCB oil, and 500 containers of flammable and toxic materials. Recognizing that without our help this abandoned site would remain a threat to local residents, EPA constructed a long-term strategy to clean up this site.

Heavy snowfall in 1996 caused several roof sections to collapse, increasing the potential for an asbestos release to the surrounding neighborhood, and creating the need for quick, concerted action. Working with local and state agencies and community groups, EPA invested $3.7 million in a major removal effort at the site. Since August 1996, EPA has removed more than 1,800 tons of asbestos-containing material and has begun the demolition of the collapsing buildings, with an ultimate goal to return this site to beneficial economic use.

Based on the amount of hazardous waste treated (Figure 3), there appears to have been a steady decrease in risks to people and ecosystems. But we still have a lot of work to do, and Superfund cleanup teams are improving their efficiency and using innovative technologies to get the job done.

Public Health Figure 5



Partnerships in the Northern Oxford County Project

The Northern Oxford County Coalition (NOCC) was formed to address citizen concerns about air quality and environmental health in the towns of Rumford, Mexico, Dixfield, and Peru in northwestern Maine. Some citizens in the county were concerned about the possibility that poor air quality was contributing to elevated rates of cancer and respiratory diseases. The major business in the area is a pulp and paper mill, situated in a deep river valley in Rumford. Although existing environmental quality standards had not been exceeded, EPA became involved as a coalition partner at the communities' request in 1994, and subsequently, has played a leading role in the coalition's work. The NOCC helps citizens of Northern Oxford County make informed decisions about their environment and improve the quality of life in their communities. The coalition includes the Maine Department of Environmental Protection (DEP), the state Bureau of Health, citizens of the four towns, local governments, businesses (including the pulp and paper mill), health care providers, and EPA. A long-term air monitoring plan will be developed from data gathered during year-long monitoring of air pollutants in valley fog, and by April 1997, the NOCC will offer a series of recommendations for improving air quality and public health.

WATCHING WHAT WE EAT

Monitoring and managing shellfish flats in New England is a way to determine the health of this habitat while protecting public health. While there has been an increase in the total acreage approved for shellfish harvesting over the last twenty-five years, the number of shellfish bed acres closed for public health concerns have doubled (Figure 4). The greatest number of closed beds are near populated areas and are associated with contamination from municipal discharges, combined sewer overflows, failed septic systems, and overboard discharges from boats.

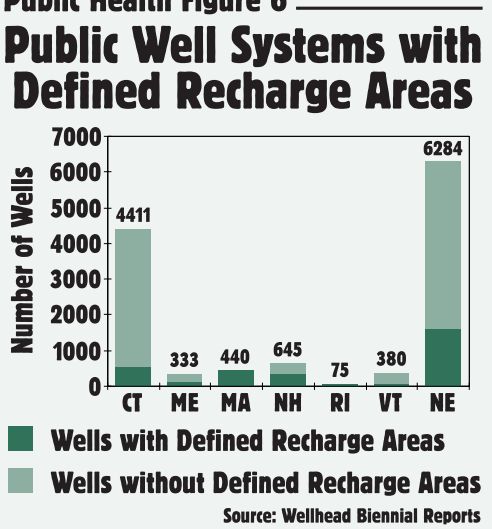
Five of the six New England states have issued statewide fish consumption advisories for the general population, with additional restrictions for subsistence fishermen and sensitive subpopulations, including children, nursing mothers, and pregnant women. Mercury has been found at levels of concern in fish everywhere in New England. In some local areas, PCBs, dioxins, and some pesticides are also a problem. To find out more about eating fish in your community, contact your local health agency.

QUENCHING OUR THIRST

Safe, potable drinking water is central to a region's health and its economy. In 1996, 95% of our public drinking water systems were in compliance with all drinking water standards (Figure 5). Most of the remaining 5% were in violation because of contamination by bacteria that were subsequently found to pose no direct threat to human health. Nevertheless, water-borne bacteria, viruses, and protozoans in our water supply will continue to be of concern as we move into the next century.

Preventing pollution of the lakes, rivers, streams, and groundwater that serve as drinking water sources is critical for public safety. Here in New England, where 31% of the population is served by groundwater, all six states have approved wellhead protection programs, a good indicator of the extent of protection for community water supplies. We are making progress toward our goal to delineate (or define) the recharge area around 100% of our public wells (Figure 6). The Safe Drinking Water Act Amendments of 1996 offer additional protection through provisions for new prevention approaches, improved consumer information, improved regulations, and funding for states and local water systems. For 1997, New England has $87 million available to fund the most pressing compliance and public health protection needs.

Public Health Figure 6



GO TO CONTENTS PAGE

GO TO NEXT SECTION